



# UNITED STATES PATENT AND TRADEMARK OFFICE

15

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,230	03/02/2004	Gansha Wu	42339-193222	9836
26694	7590	08/21/2006	EXAMINER	
VENABLE LLP P.O. BOX 34385 WASHINGTON, DC 20045-9998			LEWIS, CHERYL RENE A	
			ART UNIT	PAPER NUMBER
			2167	

DATE MAILED: 08/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/790,230

Applicant(s)

WU ET AL.

Examiner

Cheryl Lewis

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>See Continuation Sheet</u>             |

Continuation of Attachment(s) 6). Other: copy of exr's amendment to drawings figures 1, 2, and 4-7.

### **DETAILED ACTION**

1. Claims 1-28 are presented for examination.

#### ***Drawings***

2. The drawings are objected to because drawing figures 1, 2, and 4-7 depict a partial view of the drawing figures. A box and/or a line drawn around each individual drawing figure is needed to show each individual figure as a separate entity (MPEP 37 CFR 1.84(h)).

As a convenience to the applicants, the examiner has attached an amendment of drawing figures 1, 2, and 4-7 to show by example, how to effectively amend drawing figures 1, 2, and 4-7.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

Art Unit: 2167

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "K-bit" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The "N" variable is identified in the drawings of figure 1 and in the Specification. In the Specification, page 5, paragraph 00019, the "N" variable is identified as a number of bits. However, the applicants have failed to identify the "K-bit", particularly the "K" variable has not been identified.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

Art Unit: 2167

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 1, 11, and 19 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

**MPEP 2106 IV.B.2.(b)**

A claim that requires one or more acts to be performed defines a process. However, not all processes are statutory under 35 U.S.C. 101. *Schrader*, 22 F.3d at 296, 30 USPQ2d at 1460. To be statutory, a claimed computer-related process must either: (A) result in a physical transformation outside the computer for which a practical application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan, or (B) be limited to a practical application within the technological arts.

6. Claims 1, 11, and 19 are not statutory because the claims do not produce a tangible result.

The independent claims comprise a practical application. However, the practicality of these applications are not producing tangible results. The independent claims describe the structural alignment of an address, wherein the address comprises a bit word having "N" and/or any number of significant bits with the least significant bit being zero. Further, the claim encodes information of the "N" bit.

There appears to be a step missing after the bits are encoded. Again, the claims do not comprise any tangible results because the claims do not manipulate any data or data structure of the following examples that could produce tangible results: (1) memory, (2) display, (3) input/output, etc.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1, 11, and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 11, and 19 recite "encoding information".

What is this (type) information? What happens to the information after it is encoded?

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2167

10. Claims 1-8, 11-16, and 19-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Carter et al. (Pat. No. 6,003,123 filed February 10, 1998, hereinafter Carter).

11. Regarding Claims 1 and 19, Carter teaches a memory system with global address translation.

The method and associated system for a memory system with global address translation as taught or suggested by Carter includes:

aligning an address stored in a K-bit word having N least significant bits (figure 1A, col. 4, lines 40-46) such that the N least significant bits are zero (col. 5, lines 12-18); and encoding information into the N least significant bits (col. 4, lines 40-54 and 66-67, col. 5, lines 1-12).

12. Regarding Claims 2 and 20, Carter teaches the address is a pointer to where runtime properties of an objects are stored in memory (col. 4, lines 66-67, col. 5, lines 1-12).

13. Regarding Claims 3, 13, and 21, Carter teaches at least one of metadata and a table of virtual functions within a class (figures 6, 7, and 9).

14. Regarding Claims 4, 14, and 22, Carter teaches the encoded information is information about an object (col. 4, lines 40-54 and 66-67, col. 5, lines 1-12).

15. Regarding Claims 5, 15, and 23, Carter teaches the encoded information comprises at least one of reflection information (col. 4, lines 40-54 and 66-67, col. 5, lines 1-12).



Art Unit: 2167

16. Regarding Claims 6 and 24, Carter teaches allocating a memory space to store the runtime properties of an object (col. 9, lines 6-13); storing the runtime properties of the object at an address within the memory space such that the N least significant bits of the address are zero (col. 5, lines 12-18); and storing the address in the K-bit word (figure 1A, col. 4, lines 40-46).

17. Regarding Claims 7 and 25, Carter the memory space is larger than an amount of space necessary to store the runtime properties of the object (col. 9, lines 6-13).

18. Regarding Claims 8, 16, and 26, Carter teaches N is equal to eight (col. 10, lines 41-46).

19. Regarding Claim 11, the limitations of this claim has been noted in the rejections of claims 1 and 19 presented above. In addition, Carter teaches a first and second addressable units (figure 9, First Word – 42 bits, Second Word – 64 bits, and Third Word – 64 bits).

20. Regarding Claim 12, Carter teaches the K-bit word is a pointer to the second addressable bit (col. 15, lines 40-60).

### ***Claim Rejections - 35 USC § 103***

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2167

22. Claims 9, 10, 17, 18, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter et al. (Pat. No. 6,003,123 filed February 10, 1998, hereinafter Carter) as applied to claims 1, 11, and 19 above, and further in view of Chang et al. (Pat. No. RE37,305 E, filed September 19, 1983).

23. Regarding Claims 9, 17, and 27, Carter teaches encoding information into at least two of N least significant bits (col. 4, lines 40-54 and 66-67, col. 5, lines 1-12).

However, Carter does not expressly teach encoding lock information.

Chang teaches encoding lock information (col. 16, lines 29-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the virtual memory address translation of Carter's method with the virtual memory address translation of Chang's method because Chang's method could enable the address bits of Carter's method to comprise lockbit processing, wherein the lockbit processing processes special bits allowing an operating system to automatically monitor changes to persistent variables and to journal changes, create show pages, and perform other processing that is required (see Chang, col. 16, lines 29-37).

24. Regarding Claims 10 and 28, Chang teaches storing a zero in the bit of a two-bit lock code and a zero in a second bit of a two-bit lock code if an associated object is not locked (col. 15, lines 24-53, col. 16, lines 29-67); storing a one in the first bit of a two-bit lock code and a zero in the second bit of a two-bit lock code if an associated object is locked by one thread (col. 15, lines 24-53, col. 16, lines 29-67); and storing a one in the first bit of a two-bit lock code and a one in the second bit of a two-bit lock code if an

Art Unit: 2167

associated object is at least one of recursively locked by the same thread and locked by multiple threads (col. 15, lines 24-53, col. 16, lines 29-67).

25. Regarding Claim 18, Chang teaches the lock code is a two-bit lock code and the two-bit lock code indicates one of a free lock (col. 15, lines 24-53, col. 16, lines 29-67).

***NAME OF CONTACT***

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheryl Lewis whose telephone number is (571) 272-4113. The examiner can normally be reached on 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

(571) 273-4113 (Use this FAX #, only after approval by Examiner, for "INFORMAL" or "DRAFT" communication. Examiners may request that a formal paper/amendment be faxed directly to them on occasions.).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/ Technology Center (571) 272-2100.

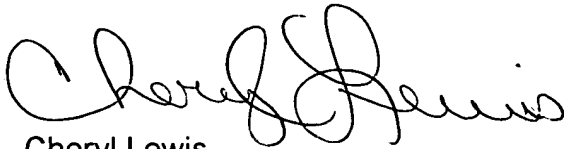
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 2167

For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the

Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Cheryl Lewis". The signature is fluid and cursive, with the first name "Cheryl" and last name "Lewis" clearly distinguishable.

Cheryl Lewis  
Patent Examiner  
August 17, 2006

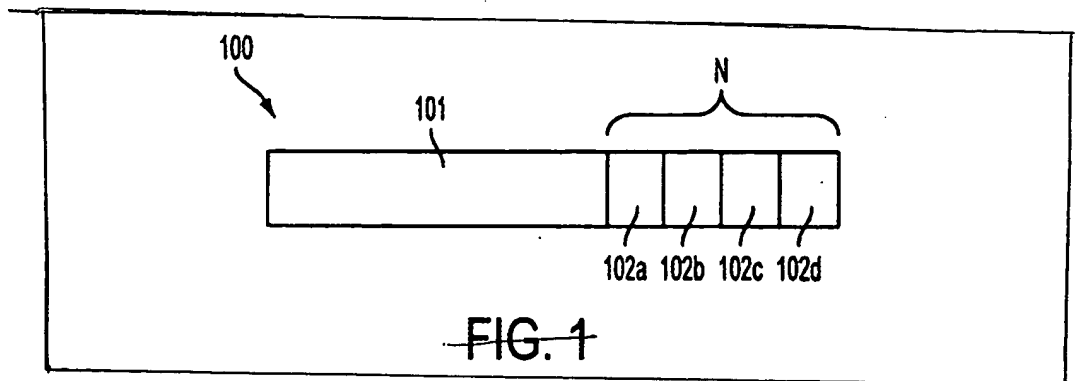


FIG. 1

FIG. 1

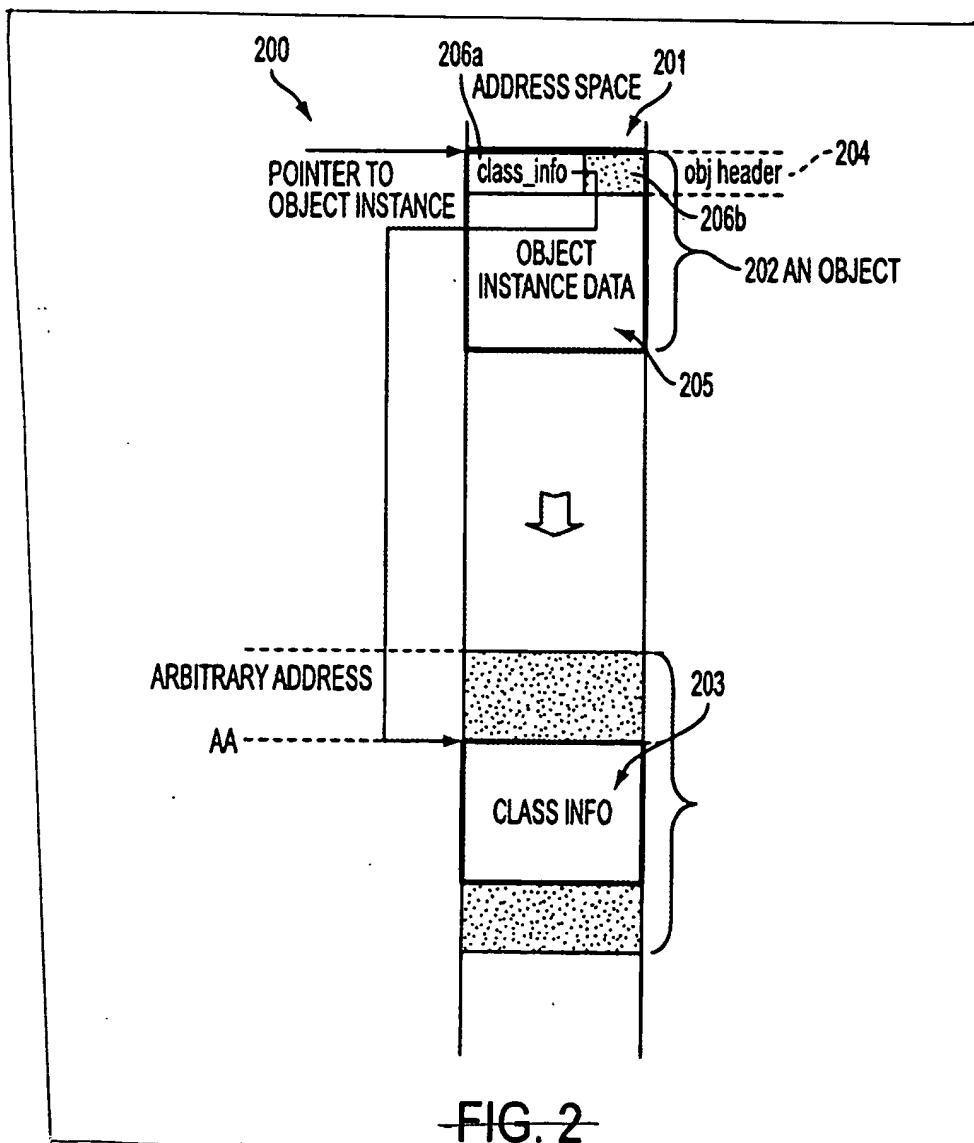


FIG. 2

FIG. 2

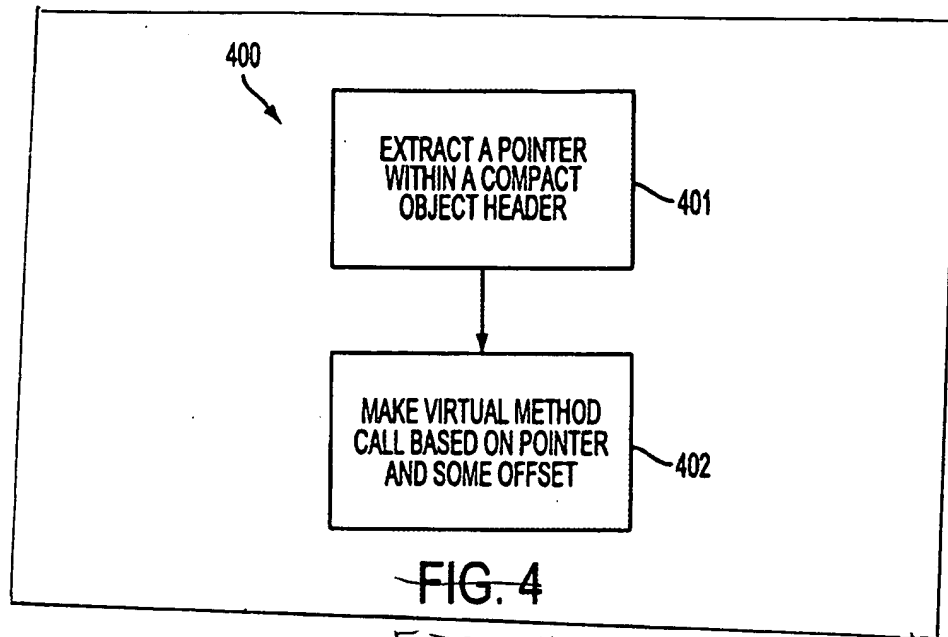


FIG. 4

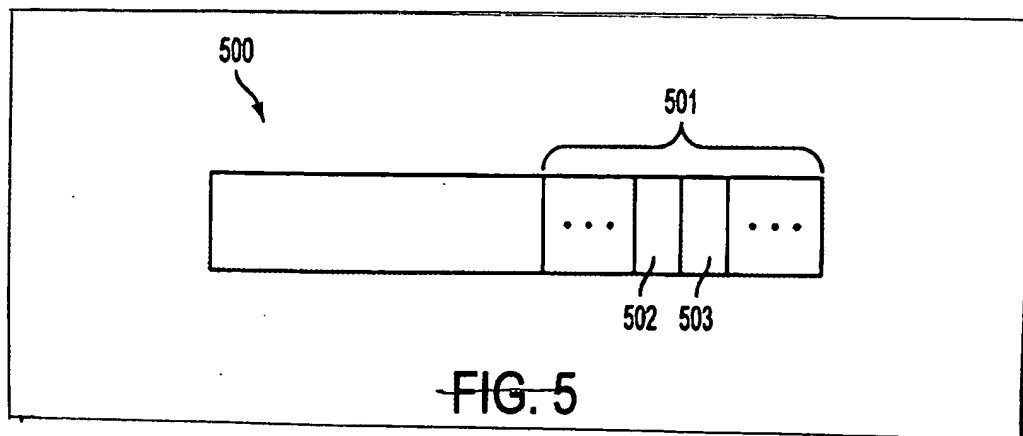


FIG. 5

